**Solving a System of Equations Using ELIMINATION (Part 1)** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Fill in the table.*

|  |  |  |
| --- | --- | --- |
| **Equation** | **Lead coefficient** | **Negative of the lead coefficient** |
| 6x + 8y = 5 | 6 | -6 |
| 3x – 5y = 9 |  | -3 |
| 2x + 7y = 10 | 2 |  |
| -9x + 2y = 4 | -9 | 9 |
| 24x + 3y = 1 |  |  |
| x + 5y = -2 | 1 | -1 |
| x – 3y = 8 |  |  |
| -x + 4y = 11 |  |  |

*Fill in the table.*

|  |  |  |
| --- | --- | --- |
| **Equation** | **Multiply the equation by** | **Result** |
| 5x + 2y =1 | 3 | 15x + 6y = 3 |
| 3x + 5y = 8 | 2 |  |
| 9x – 2y = 3 | 5 | 45x – 10y = 15 |
| 8x – 9y = -2 | 3 |  |
| x + 8y = 4 | 2 | 2x + 16y = 8 |
| x – 7y = 5 | 8 |  |
| 4x + 2y = -7 | -3 | -12x – 6y = 21 |
| 6x + 5y = 3 | -1 |  |
| 2x – 8y = 5 | -2 | -4x + 16y = -10 |
| 8x – 3y = -9 | -5 |  |
| 7x + y = -2 | -4 |  |
| 5x – y = 6 | -2 |  |

*Solve the equation.*

1. Solve for x if y = 6. 5x + 2y = 17 2. Solve for y if x = 2 4x + 3y = 23

3. Solve for x if y = -4 2x + 3y = 6 4. Solve for y if x = -1 7x – 2y = 9

**Solving a System of Equations Using ELIMINATION (Part 2)** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Steps to solving a system of equations using elimination:*

**Step 1** – Do a mental check. Can you add both equations and eliminate one of the variables?

**If YES, follow these steps.**

**Step 2** – Add the equations together.

**Step 3** – Solve for the variable that wasn’t eliminated.

**Step 4** – Choose one of the original equations. Plug the variable you solved for in step 3 into the equation. Solve.

**If NO, follow these steps.**

**Step 2** – Multiply the top equation by the lead coefficient of the bottom equation.

**Step 3** – Multiply the bottom equation by the negative of the lead coefficient of the top equation.

**Step 4** – Add the equations together.

**Step 3** – Solve for the variable that wasn’t eliminated.

**Step 4** – Choose one of the original equations. Plug the variable you solved for in step 3 into the equation. Solve.

*We’ll do the first three problems together.*

1. 3x – 2y = 13

x + 2y = 7

2. 2x + y = 5

3x – 2y = 4

3. x + y = 3

2x – 3y = 16

4. 6x + 5y = 1

6x – 5y = 11

5. 3x – 2y = -10

2x + y = 5

6. x + 2y = 6

3x – 2y = 2

7. 3x + 4y = -25

2x – 3y = 6

8. 4x – 3y = 12

x + 2y = 14

9. x + 5y = -3

3x – 2y = 8

10. 3x – 5y = -16

2x + 5y = 31